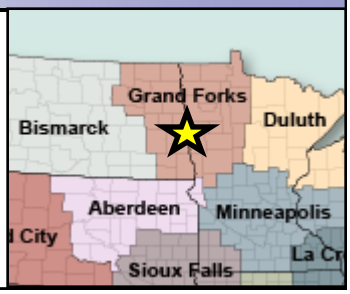
National Weather Service Grand Forks

Weather & Climate Review

February-March 2022



February

	AveT	TDept	THigh	TLow	Pcpn	PDept	Snow	PWnd
DVL	4.0	-6.6	40	-28	M	M	M	M
NWS GF	3.4	-8.8	39	-25	0.97	0.41	15.5	M
GFK	1.1	-9.5	38	-31	0.88	0.37	12.9	60
RDR	3.9	-6.7	41	-29	M	M	M	52
FAR	6.0	-7.4	39	-27	0.52	-0.17	7.0	64
BDE	0.3	-9.4	40	-34	M	M	M	48
PKD	1.9	-10.4	38	-37	M	M	M	57
BJI	1.2	-9.4	37	-37	M	M	M	44
TVF	1.8	-8.2	38	-29	M	M	M	54
Y63	6.2	-6.5	38	-25	M	M	M	M
AGA	-1.7	-13.0	37	-41	M	M	M	M

Table 1 February 2022 Temperature and Precipitation Statistics

In Table 1, (ND) **DVL** = Devils Lake, **NWS GF** = NWS Grand Forks, **GFK** = GF Airport, **RDR** = GF Air Force Base, **FAR** = Fargo, (MN) **BDE** = Baudette, **PKD** = Park Rapids, **BJI** = Bemidji, **TVF** = Thief River Falls, **Y63** = Elbow Lake, **AGA** = Agassiz MN NWR.

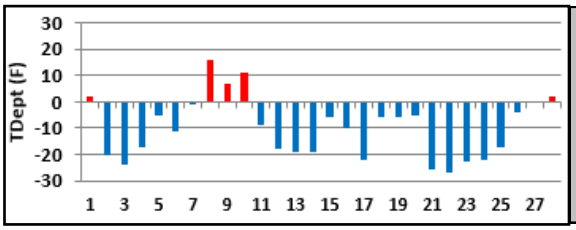


Figure 1 February Daily Departure from Normal Temperatures at the NWS Grand Forks ND

Blue Bars = Colder than Normal Days & Red Bars = Warmer than Normal Days

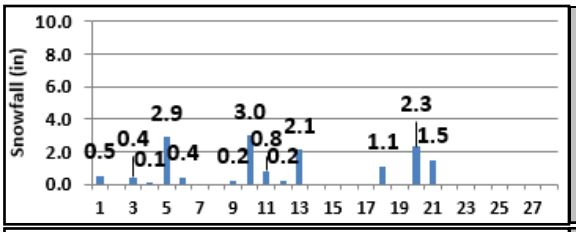


Figure 2 February Daily Snowfall Totals NWS Grand Forks ND

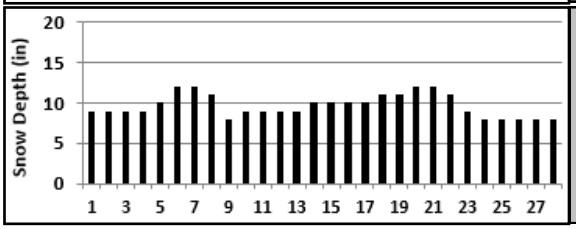


Figure 3 February Daily Snow Depth NWS Grand Forks ND

Table 1 shows the February average temperature (AveT), departure from normal temperature (TDept), highest temperature (THigh), lowest temperature (TLow), precipitation (Pcpn), departure from normal precipitation (PDept), snowfall (Snow), and peak wind speed (PWnd in mph) for 11 climate stations. The February average temperature was well below normal at all sites. Precipitation amounts were above normal at NWS Grand Forks and slightly below normal at Fargo (the 2 primary winter measuring sites). Figure 1 plots the daily departure from normal temperatures in February 2022 at the NWS Grand Forks. Only 5 days during the month were above normal. Figure 2 shows the February daily snowfall totals at NWS Grand Forks. There were quite a few days with measurable snowfall. Figure 3 shows the daily snow depth at the NWS in Grand Forks (which is measured at 6 am).

Records

At Fargo-Moorhead, our longest running climate site, there were no daily or monthly records set in February 2022.

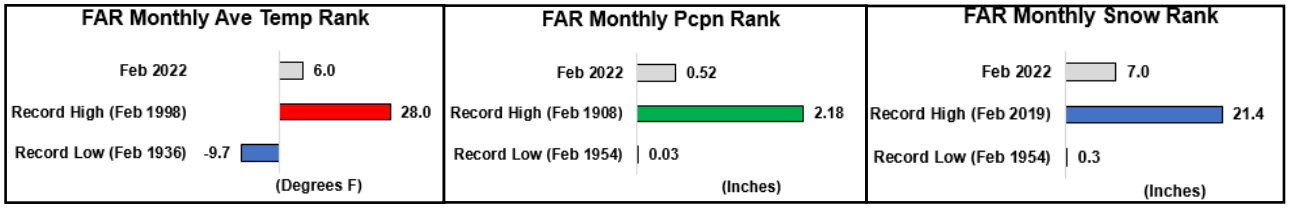


Figure 4 February 2022 Fargo Temperature and Precipitation Statistics Compared to Records

Figure 4 compares the February 2022 average temperature (AveT), precipitation (Pcpn), and snowfall (Snow) at Fargo to the established records.

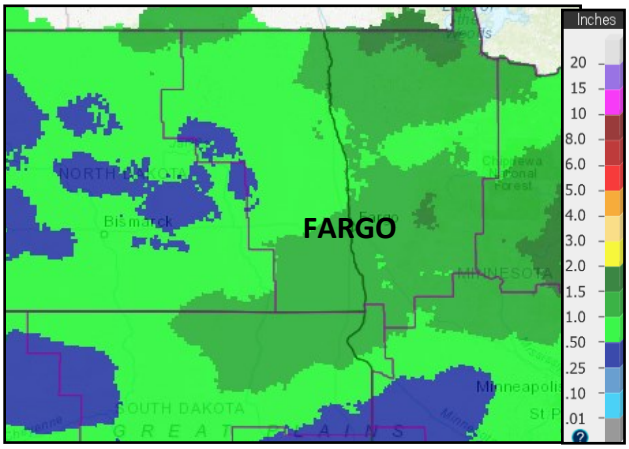


Figure 5 February Observed Precipitation

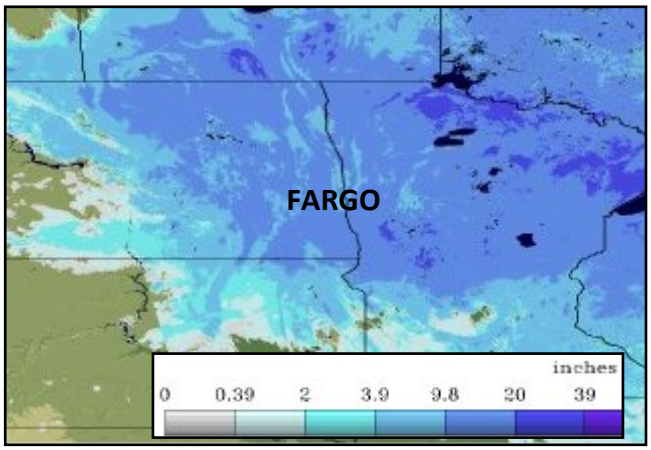


Figure 6 February 28th Snow Depth

Figure 5 gives a February precipitation estimate for all of eastern North Dakota and the northwest quarter of Minnesota. Most of the area received 0.5 to 2.0 inches of precipitation (green colors). Figure 6 shows the depth of snow on the ground across the Northern Plains on February 28th. Most of the area had over 9.8 inches of snow on the ground.

Temperature

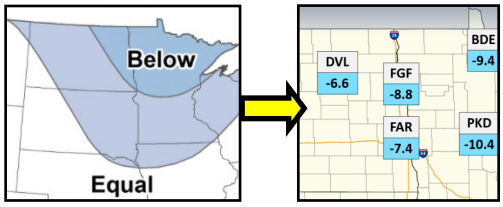


Figure 7 CPC Temp Outlook

Figure 8 Obs Temp Dept

Precipitation

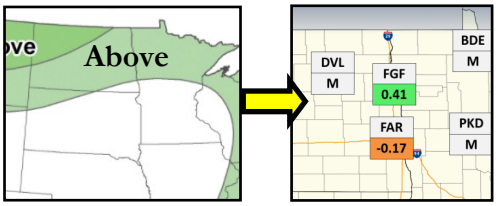


Figure 9 CPC Pcpn Outlook

Figure 10 Obs Pcpn Dept

The February temperature (Figure 7) and precipitation (Figure 9) outlooks issued by the Climate Prediction Center (CPC) in late January are shown above. Compare these with the observed February departures from normal temperatures (Figure 8) and precipitation (Figure 10).

Longer Term Trends

Looking at just the Fargo climate site (FAR), Figures 11 and 12 show how February 2020 fits into the previous 5 months. Figure 11 plots the monthly departures from normal temperatures at Fargo. The blue bars represent months that were colder than normal, while the red bars represent months that were warmer than normal. Figure 12 plots the monthly departures from normal precipitation at Fargo. The green bars represent months that were wetter than normal, while the brown bars represent months that were drier than normal.

December, January, and February (the meteorological winter months) were all below normal for temperatures (Figure 11). December was above normal, but January and February both featured below normal precipitation amounts (Figure 12).

Figure 13 tracks how much precipitation has fallen since January 1, 2022, and how it compares to normal and last year. Snowfall is also tracked for the snow season, which began on July 1, 2021.

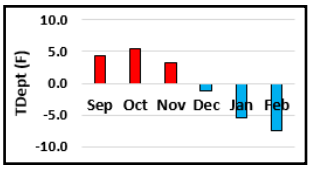


Figure 11 Monthly Departures from Normal Temps at Fargo, ND

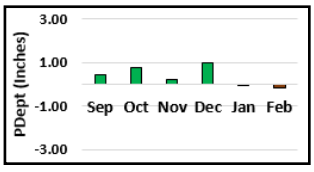


Figure 12 Monthly Departures from Normal Pcpn at Fargo, ND

	Observed Value	Normal	Departure from Normal	Last Year
Pcpn Since Jan 1	1.15	1.40	-0.25	0.66
Snow Since Jul 1	46.2	38.1	8.1	24.0

Figure 13 Yearly Precipitation & Seasonal Snowfall Trends at Fargo

U. S. Drought Monitor

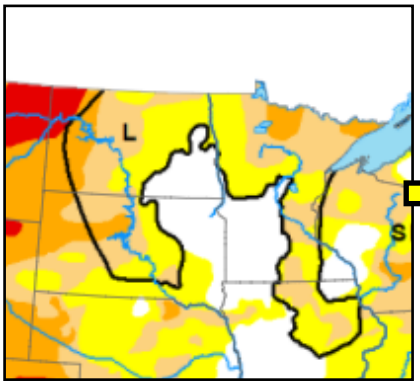


Figure 14 U. S. Drought Monitor, February 3

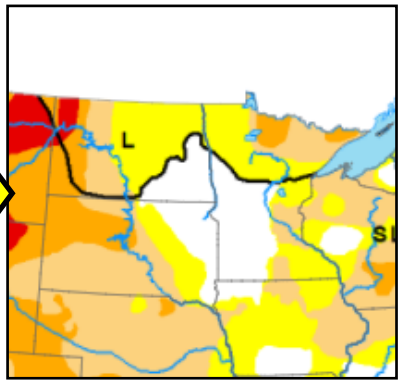
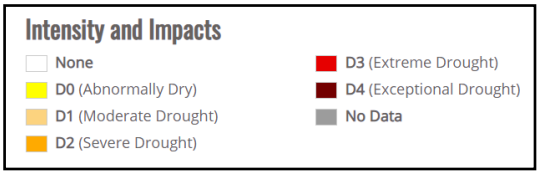


Figure 15 U. S. Drought Monitor, February 24

There was not much change in the U. S. Drought Monitor for the Northern Plains through the month of February 2022 (Figures 14 & 15). The key for both figures is shown below.



Winter Warnings

February 2022 was another very active weather month. 1 Winter Storm Warning, 6 Blizzard Warnings, and 4 Wind Chill Warnings were issued. The graphics below show the various warnings issued, with either the corresponding snowfall amounts or peak wind speeds for each event.

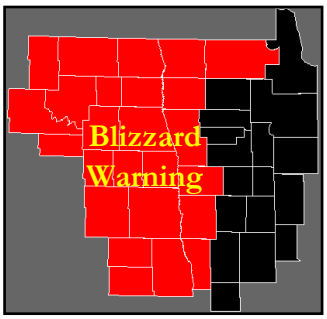


Figure 16 February 1
Blizzard area (6th overall)

Peak Winds

5S Devils Lake 70 mph

Leeds 65 mph

8N McHenry 63 mph

Cooperstown 63 mph

Valley City 62 mph

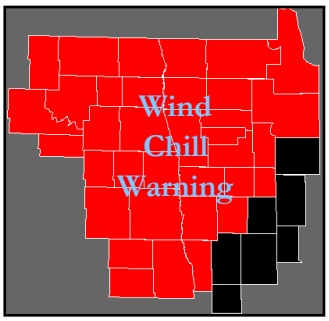


Figure 17

February 2-3
Wind Chill Warning area
(-40F to –60F wind chills)

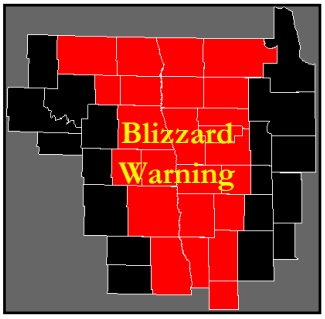


Figure 18 February 10-11
Blizzard area (7th overall)

Peak Winds

Fargo 60 mph

Grafton 58 mph

Grand Forks 58 mph

Bowesmont ND 56 mph

Fergus Falls 56 mph

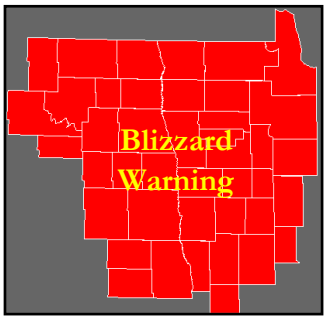


Figure 19 February 18
Blizzard area (8th overall)

Peak Winds

6SE East Grand Forks 65 mph

Fargo 64 mph

5S Devils Lake 63 mph

Grand Forks 60 mph

8N Brantford ND 59 mph

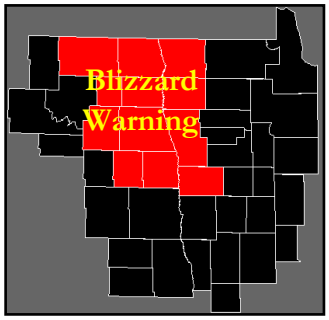


Figure 20 February 20
Blizzard area (9th overall)

Peak Winds

Grand Forks 53 mph

6SE East Grand Forks 51 mph

Grand Forks AFB 48 mph

4ENE Hendrum MN 48 mph

6SW Warren MN 45 mph

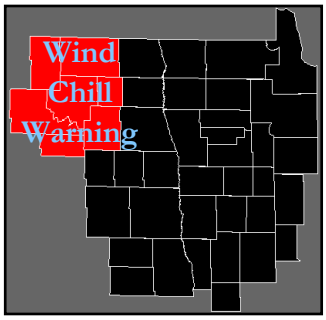


Figure 21

February 20-22
Wind Chill Warning area
(-40F to –60F wind chills)

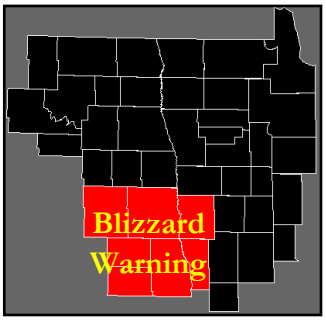


Figure 22 February 21
Blizzard area (10th overall)

<u>Peak Winds</u>

Fargo 46 mph

Gwinner 43 mph

18E Lisbon 41 mph

Wahpeton 40 mph

Buffalo, ND 40 mph

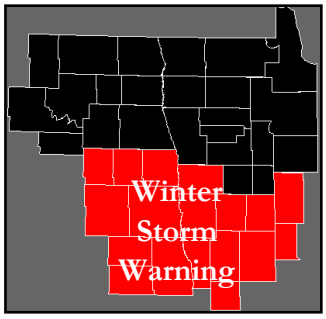
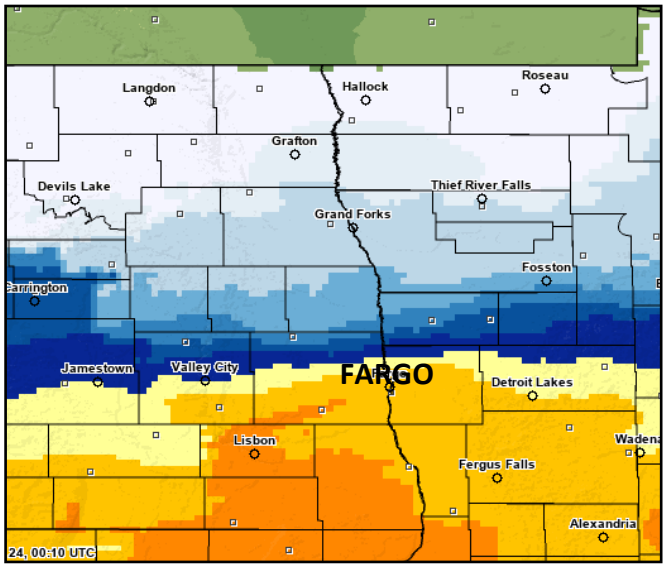


Figure 23 February 21-22
Winter Storm area



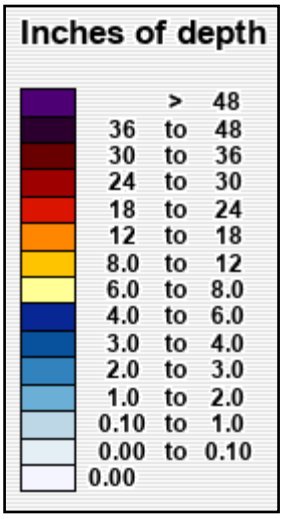


Figure 24 Observed Snowfall February 21-22
(not exact for all areas)

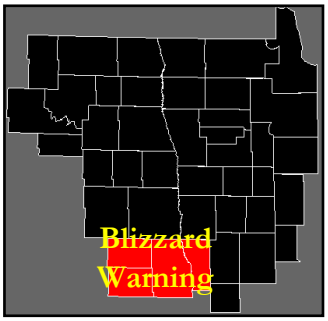


Figure 25 February 22
Blizzard area (11th overall)

<u>Peak Winds</u>

Fargo 45 mph

Wahpeton 43 mph

2W Tenney MN 43 mph

3SE Campbell MN 41 mph

Gwinner 40 mph

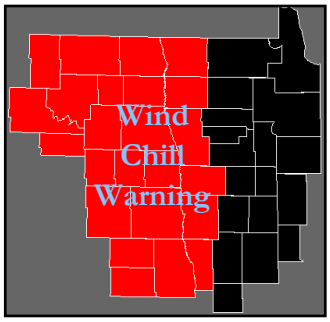


Figure 26 February 22-23
Wind Chill Warning area
(-40F to –60F wind chills)

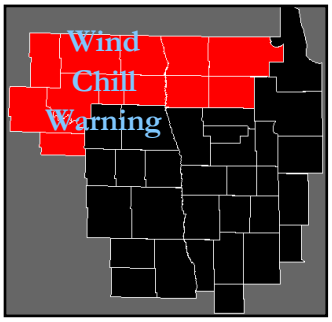
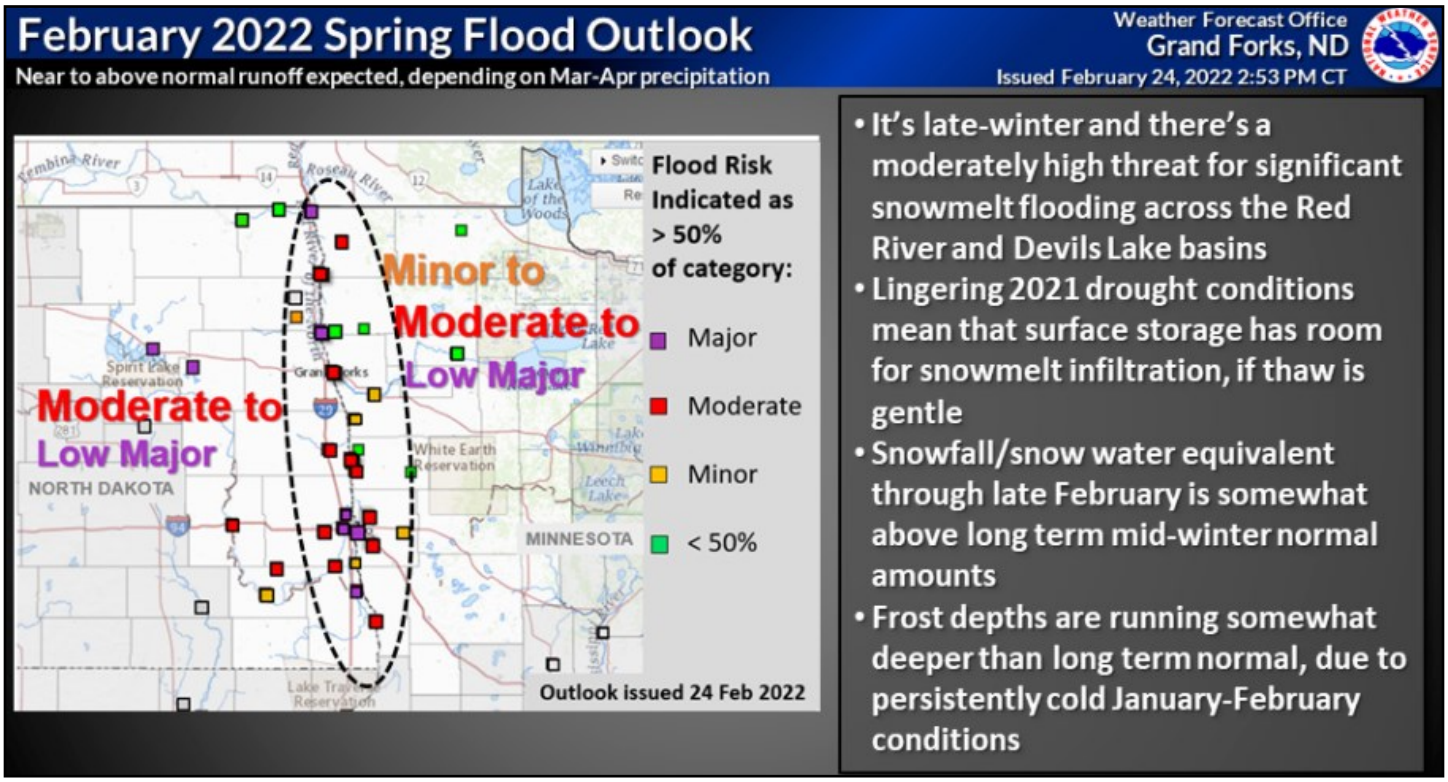


Figure 27 February 23-24
Wind Chill Warning area
(-40F to –60F wind chills)

Curious on how this season's blizzards compare to years past? As of February 28, 2022, this season has seen the highest number of blizzards within a winter at 11 blizzards, outpacing the 2013-2014 and 1996-1997 seasons with 10 blizzards. This is well above the average 2.6 blizzards we see in a typical winter season.



For more information on the Spring Flood Outlook, check out: https://www.weather.gov/fgf/currentfloodoutlook

March

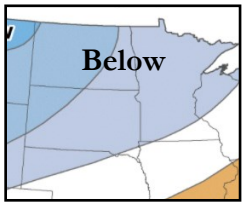


Figure 28 Temperature

Figure 29 Precipitation

The latest Climate Prediction Center (CPC) temperature (Figure 28) and precipitation (Figure 29) outlooks for March 2022 are shown to the left. For eastern North Dakota and the northwest quarter of Minnesota, the CPC is forecasting higher probabilities for below normal temperatures and equal chances for above, normal, or below normal precipitation.

Sunrise/Sunset

Fargo, ND Mar 1 Sunrise: 7:08 am Sunset: 6:12 pm

Mar 31 Sunrise: 7:09 am Sunset: 7:54 pm

Daylight Saving Time begins on Sunday, March 13, 2022 at 2 a. m.

Last Year & Normals

Per Table 2, in March 2021, the average temperature was well above normal at all sites. Precipitation amounts were below normal.

	AveT	TDept	THigh	TLow	Pcpn	PDept	Snow	PWnd
DVL	34.0	8.4	68	-12	M	M	M	M
NWS GF	35.0	8.9	74	-8	0.21	-0.81	0.1	M
GFK	34.3	9.1	73	-10	0.23	-0.73	T	59
RDR	33.9	8.7	73	-12	M	M	M	M
FAR	36.0	8.2	77	-5	0.28	-1.02	2.8	56
BDE	33.2	9.5	64	-13	M	M	M	59
PKD	34.1	8.4	73	-7	M	M	M	51
BJI	32.9	8.7	71	-10	M	M	M	M
TVF	34.3	9.8	72	-9	M	M	M	M
Y63	35.4	7.8	77	-6	M	M	M	M

Table 2 March 2021 Temperature and Precipitation Statistics

Figure 30 shows normal highs and lows on March 1st for selected cities across eastern North Dakota and northwest Minnesota. Figure 31 shows how normal highs and lows change by March 31st. As an example, at NWS Grand Forks on March 1st, the normal high is 26 and the normal low is 9. By March 31st, the normal high rises to 43 and the normal low rises to 24. Figure 32 shows the normal precipitation and snowfall amounts for a few selected sites. As an example, the normal precipitation at NWS Grand Forks in March is 0.91 inches and the normal snowfall is 7.8 inches.

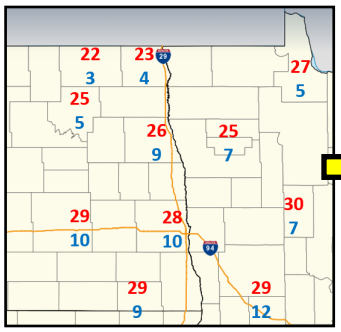


Figure 30 Normal Temps Mar 1

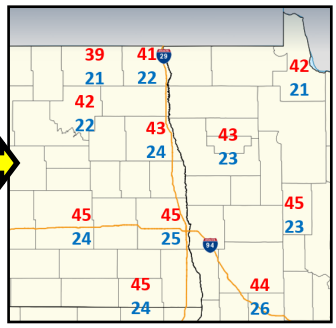


Figure 31 Normal Temps Mar 31

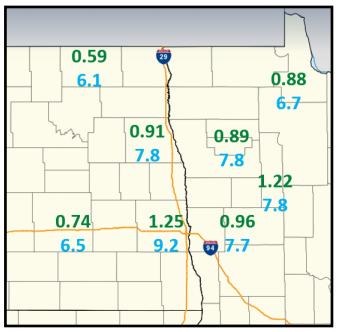


Figure 32 Normal Mar Pcpn/Snow

Winter & Spring Warnings 2021

One Winter Storm Warning (for Heavy Snow) was issued for portions of southeast North Dakota and west central Minnesota from the evening of March 10th through the morning of March 11th, 2021 (Figures 33 and 34).

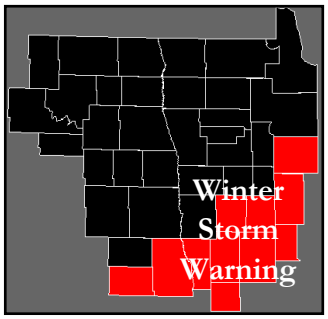


Figure 33 March 10-11
Winter Storm area

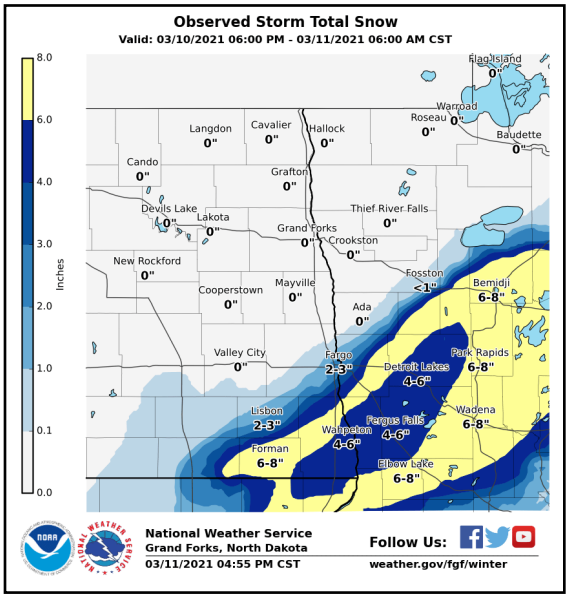


Figure 34 Observed Snowfall March 10-11
(not exact for all areas)

High Wind (Figure 35) and Red Flag warnings (Figure 36) were issued on March 29th. The highest wind report was near Leeds, ND, at 68 mph. A wildfire also occurred east of Crookston, MN, on March 29th, which showed up on satellite imagery as a “hot spot.”

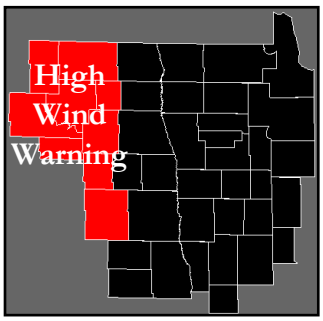


Figure 35 March 29 High Wind

Figure 36 March 29 Red Flag